

Applicants respectfully submit that the combination of Van Cleempur with Applicants' disclosure is improper.

In any event, Claim 1 recites a low dielectric constant film consisting essentially of a ladder-type hydrogen siloxane. This is not subject matter that was recited in canceled Claim 3.

Van Cleempur is deficient in that it fails to teach or suggest using a ladder-type hydrogen siloxane in the second dielectric layer 119 thereof. Van Cleempur teaches that caged siloxane precursors are used to form the dielectric layers thereof. *See*, col. 3, lines 7-26. Van Cleempur teaches that a subunit of the caged siloxane precursor has a molecular structure, in which silicon atoms are bridged to one another via oxygen atoms so as to form a polyhedron, bowl-like, or any three dimensional form having an interior and exterior space associated with it. *See*, col. 8, lines 28-33; see also Fig. 5. A ladder-type molecular structure is different from a cage-type molecular structure.

The caged siloxane precursor disclosed in Van Cleempur fails to suggest a ladder-type hydrogen siloxane. A film having a caged structure, such as the structure in HSQ, lacks good chemical resistance and mechanical strength. A film having a caged-structure is largely scraped off during a CMP process, leaving behind an extensive erosion region. *See*, e.g., page 3, lines 6-18; Fig. 1B and Fig. 15 of Applicants' specification.

Moreover, Van Cleempur teaches away from using a ladder-type hydrogen siloxane in the second dielectric layer 119 thereof. Van Cleempur criticizes the use of silsesquioxanes as often being brittle and that the high temperature curing raises the dielectric constant of the final material relative to the pre-bake material. *See*, col. 2, lines 21-35.

No other teaching has been identified that would make up for this deficiency in Van Cleempus that it fails to teach or suggest using a ladder-type hydrogen siloxane. In this regard, the cited art fails to teach or suggest every element in Claim 1.

Further, Applicants respectfully submit that the Van Cleempus is deficient in that it fails to teach or suggest using a protection film. Van Cleempus teaches that an etch stop layer 115 is deposited onto a first dielectric layer 113, as disclosed in step 207. *See*, col. 6., lines 25-31; Figures 1A to 1E. Van Cleempus fails to teach or suggest that any layer is present between the etch stop layer 115 and the dielectric layer 113. Given that Van Cleempus fails to disclose using a protection layer, a person of ordinary skill in the art would not have been motivated to insert a protection layer between the etch stop layer 115 and dielectric layer 113 thereof. Moreover, a person of ordinary skill in the art would not have been motivated to select a barrier film to insert between the etch stop layer 115 and the dielectric layer 113.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111  
Appln. No.: 10/767,335

Docket No: Q79657

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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